Scope of Work for
Philpott Dam 216 Feasibility Study
Recreational Impacts and Opportunities WG 1b
April 2008

INTRODUCTION

The U.S Army Corps of Engineers, Wilmington District (Wilmington District) in partnership with the Commonwealth of Virginia are sponsoring a feasibility study under the authority of Section 216 of the River and Harbor and Flood Control Act of 1970 (Public Law 91-611). Section 216 authorizes the review of the operation of the Philpott Dam and Lake and report recommendations to Congress on the advisability of modifying the structures or the structures' operation and for improving the quality of the environment in the overall public interest.

Approval of participation in this feasibility study by the US Army Corps of Engineers, Wilmington District, was based on the report entitled 905(b) Reconnaissance Report, Philpott Dam and Lake, Virginia, (Section 216) Study, Smith River dated August 2004, approved 7 January 2005. Public, stakeholder, and local, State, and Federal agency input received during the early stages of this study indicated there is a public interest in reviewing the following areas: natural resources; downstream fisheries management related to the brown trout fishery, water quality, the Philpott guide curve and its effects on various resources, and upstream fisheries related to the largemouth bass fishery in Philpott Lake. Hydropower and upstream recreation were topics addressed in several comment letters. Downstream water supply, recreation, erosion and siltation, drought management, fish and wildlife, endangered species, cultural resources, and shoreline management are of concern; however; very few comments were submitted regarding these concerns. US Army Corps of Engineers Regulation (ER) 1105-2-100, Planning Guidance Notebook, provides full guidance regarding conduct of the study.

Technical Work Groups were formed in the following areas: Natural and Cultural Resources; Operation Policies and Administrative Procedures; Shoreline Management and Erosion; Water Quality; Water Supply; and, Aesthetics and Recreation. Each of the Work Groups is to develop a Scope of Work to assess existing conditions and to forecast the future conditions that would exist if no modifications are made to operating procedures at the Philpott Dam. This analysis is being done in accordance with U.S. Water Resources Council's Economic and Environmental Principles and Guidelines for Water and Related Land Resources Implementation Studies as implemented by the U.S. Army Corps of Engineers' Planning Guidance Note Book (Engineering Regulation 1105-2-100). A summary of the progress made thus far on the Philpott 216 Study can be found in the November 2006 Project Management Plan for Philpott Lake, Virginia (Section 216) Feasibility Study. This management plan and other materials regarding the Philpott 216 study are available at the following website: http://www.saw.usace.army.mil/Authorized_Projects/Main.htm.

The objective of the proposed study is to provide the flow and water-quality modeling tools that can be used to assess the effects of changes in Philpott Dam operations on Smith River flows; duration, extent, velocities, and depth; and temperature distributions in the river. This objective will be met by performing the following tasks: (1) review existing data and develop a hydrologic and water-quality monitoring plan to support modeling; (2) review existing modeling approaches for the Smith River below Philpott, (3) implement the hydrologic and water-quality monitoring program to obtain information necessary to support and test model evaluation; (4) develop, calibrate, and test hydrodynamic models that are capable of simulating upstream and downstream movement of water; (5) develop, calibrate, and test water-quality models that simulate temperature and DO dynamics in the Smith River main channel; and (6) apply these models to determine effects of selected water management scenarios on downstream conditions in the Smith River. Coordination with the Natural Resources Work Group will be critical as improvement of habitat conditions for brown trout and Roanoke logperch is a planning objective of the study.

SCOPE

The Smith River has been known for decades as one of the regions top destinations for trout fishing. As the economy of the area has been in decline for the past several years with the loss of industry and jobs, recreational opportunities and ecotourism have risen as a priority for local communities and interest groups. Not only is there a desire to revive the fishery to its peak condition, but other activities such as paddle sports (canoeing/kayaking) and trails are being explored and developed. Currently, there are several interest groups working to create access areas points to the river. The intent is to make the Smith River a focal point in the region so that it will be a “draw” for tourists as well as the local population.

The study area will include the Smith River below Philpott Dam downstream to the confluence with the Dan River. The study will consider additional length of the Smith River if necessary based on the research conducted. There is no intention at this point in time to consider recreation impacts or opportunities on the upstream (reservoir) side of the Dam. Existing legislation, regulations and policies provide the Operations Project Manager at Philpott Lake and/or the Wilmington District Commander with the necessary authority to address recreation on the reservoir independently from the 216 study. If a change were to occur in the operation of the dam significant enough to affect the water level on the upstream side, then the impacts on those recreational opportunities will be addressed.

APPROACH

It is anticipated that much of the information needed is already available through current studies and surveys that have been conducted on demographics and user interests. The group will focus on researching published data and will supplement it with surveys to fill in any additional information. The following items will be addressed in this scope:

a. As interest in the Smith River for recreation and tourism increases, it is imperative that we have a clear understanding of what local governments, interest groups and the public envision for the future of the river. In order to determine this along with current usage rates, the group will be working to develop a list of questions that can be used to survey all of the stakeholders. Responses will be gathered during the Virginia Department of Game and Inland Fisheries creel survey, by mailing surveys to stakeholders and by posting a survey on the 216 study website with links to it from other related sites (i.e. the Philpott Lake website). Research will also be conducted to see what information and studies are already available, such as the 2006 Virginia Outdoors Survey, which can provide information on recreational demand.
b. While temperature is an issue for the health of the fish population in the river, it is also a concern for those who use the river for other activities such as paddle sports. It is recognized that the current cold water releases prevent any "contact recreation" such as tubing or swimming and limits opportunities for wade fishing and paddle sports without protective gear. In order to address this topic, research will be done to determine what the temperature levels are in other similar river systems that are used for these recreational activities and to see if there are any documented standards.
c. Flow rates have also been a challenge to the fishing community and paddlers and the requirements for each group are somewhat contradictory. While fisherman require lower flow rates, those floating the river need higher levels of discharge that varies based on skill levels. Having both generators operating produces flows closer to white water conditions near the dam, one generator may be more suitable for novice to intermediate paddlers and station service generation creates a river that is not navigable for the first several miles from the dam. Some of the information required for this should be obtained through models created by other work groups, while other components can be obtained through surveys of fisherman/paddlers, water management staff of the Wilmington District and through published studies or standards. Data that will need to collected to address this situation includes:
    1. What is the optimal flow rate for a novice, intermediate and advanced paddler for each section of the river?
    2. What is the optimal flow rate for a wade fisherman for each segment of the river?
    3. How does the flow rate vary over distance from the dam?
    4. As distance from the dam increases, at what point is the river navigable with no or minimal release?
    5. How long does it take for a slug of water to pass down the river and what external factors can affect it?
    6. Does the flow rate affect accessibility to the river at current publically used points of entry?
d. A greenway is already in the process of being created along the Smith River by local governments and interest groups. This includes the creation of trails and access points for hiking, picnicking, access to fishing spots and opportunities for

wildlife watching. While these trails would be created off of Corps property, it is noted that the operation of the reservoir could affect the success of this endeavor. The river is a primary draw and an integral part of the greenway. As a result, a high level of water quality, enhanced fish/wildlife habitat and a functioning riparian zone will all be crucial in promoting ecotourism and drawing visitors to use these facilities. Each of these issues should be addressed by other work groups, but the impacts to recreation must be addressed when recommendations are made. Temperature and flow rates will also be considerations along the greenway and will be addressed as noted above. In addressing these concerns, the stage will also be set for the creation of a blueway if local governments and interest groups decide to pursue that in the future.

e. The aesthetic value of having a biologically healthy river is also of importance to the recreational community. Users appreciate the experience of being in nature and recreating in visually appealing ecosystems. Therefore any recommendations for habitat improvements or changes to the physical environment will need to address the impacts on the recreational experience and will be looked at when proposed.
f. Predictability in recreational opportunities is also of importance. It has been noted that desired flow rates can be contradictory for fisherman and paddlers; therefore a reliable schedule that is easily accessible and available in advance is paramount. Once information is gathered on flow rates, the group will develop a proposal for releases that will minimize conflicts between the primary uses so they may coexist with the maximum benefit to the community.
g. Recreation is a multi-billion dollar industry in the United States, and the economic impact from it reaches the communities surrounding Philpott Lake. Data appears to be readily available to address the benefits and will need to be analyzed on current usage and from the resultant proposal this group submits. We will use an economist from the Wilmington District to perform this analysis.

SCHEDULE

March 2008: Develop a list of questions to be added to the creel survey conducted by the state and seek approval through USACE channels.

April 2008: Anticipated timeframe for the creel survey to begin.

April 2008: Finalize questions for the general survey on recreational demands, usage and enjoyment/value of the experience. Seek approval of the survey through USACE channels.

May 2008: Mail general surveys to all known stakeholders and post on the website, with and anticipated return date of July 2008.

July 2008: Complete research on available surveys, studies and guidelines related to demand, usage, temperature, flow rates, etc.

August 2008: Begin analyzing data collected to date by the group, and anything completed by other work groups related to recreation and its economic impacts.

September 2008: Determine any gaps in the data collected, what additional information is needed and a method for obtaining needed components.

October 2008: Begin formulating recommendations to improve recreational opportunities.

December 2008: Complete a draft proposal pending any outstanding data needs.

FUNDING

It is anticipated that each of the group's co-leaders will spend 80 hours in FY08 and the other two USACE/State members and economist will spend 25 hours each. At a normal burdened rate of $100 per hour, that equates to $23,500. The other six group members will likely average around 25 hours each. At a normal volunteer rate of $20 (comparable to current USACE volunteer rate), $3,000 worth of volunteer labor will be realized.

It is anticipated that each of the group's co-leaders will spend 60 hours in FY09 and the other two USACE/State members and economist will spend 20 hours each. At a normal burdened rate of $100 per hour, that equates to $18,000. The other six group members will likely average around 20 hours each. At a normal volunteer rate of $20 (based on USACE policy), $2,400 worth of volunteer labor will be realized.

TASK	MEANS OF ACCOMPLISHMENT	DURATION	COST
1. Develop questions for river recreation survey	Review OMB approved questions and select those which will provide needed data for model.	1 month	16hrs DCR $1600 in kind 16 hrs COE $1600 cash 6 hrs Volunteers $120 in kind
2. Conduct survey of recreational users	Sample river boaters, swimmers, tubers, wildlife viewers, scenic viewers with mail and electronic survey of OMB approved questions	2 months	16 hrs DCR $1600 in kind 16 hrs COE $1600 cash 16 hrs Volunteers $320
3. Analyze DGIF Creel Survey findings	Review Creel Survey findings for data needed to answer river user questions related to fishing	1 month	16 hrs DCR $1600 in kind 16 hrs COE $1600 cash 10 hrs

			Volunteers $200 in kind
4. Estimate existing and projected recreational demand	Review 2006 Virginia Outdoors Survey results and the findings of the 2007 Virginia Outdoors Plan	2 weeks	16 hrs DCR $1600 in kind 4 hrs COE $400 cash 4 hrs Volunteers $ 80 in kind
5. Determine current recreational use by river segment and affects of project operation on that use	Use findings from surveys and research to determine recreational use of the Smith River below the dam and project how that use could be enhanced or affected by changes in project operation.	3 months	32 hrs DCR $3200 in kind 40 hrs COE $4000 cash 10 hrs Volunteers $200 in kind
6. Draft report of findings and recommendations	Compile findings and recommendations into draft report and circulate for review and comment	2 months	24 hrs DCR $2400 in kind 36 hrs COE $3600 cash 10 hrs Volunteers $200 in kind
7. Formulate a draft proposal	Based on findings and recommendations from report draft a proposal for how operations of the Philpott project should be modified to best meet identified needs and objectives.	1 month	24 hours DCR $2400 in kind 24 hours COE $2400 cash 10 hrs Volunteers $200 in kind